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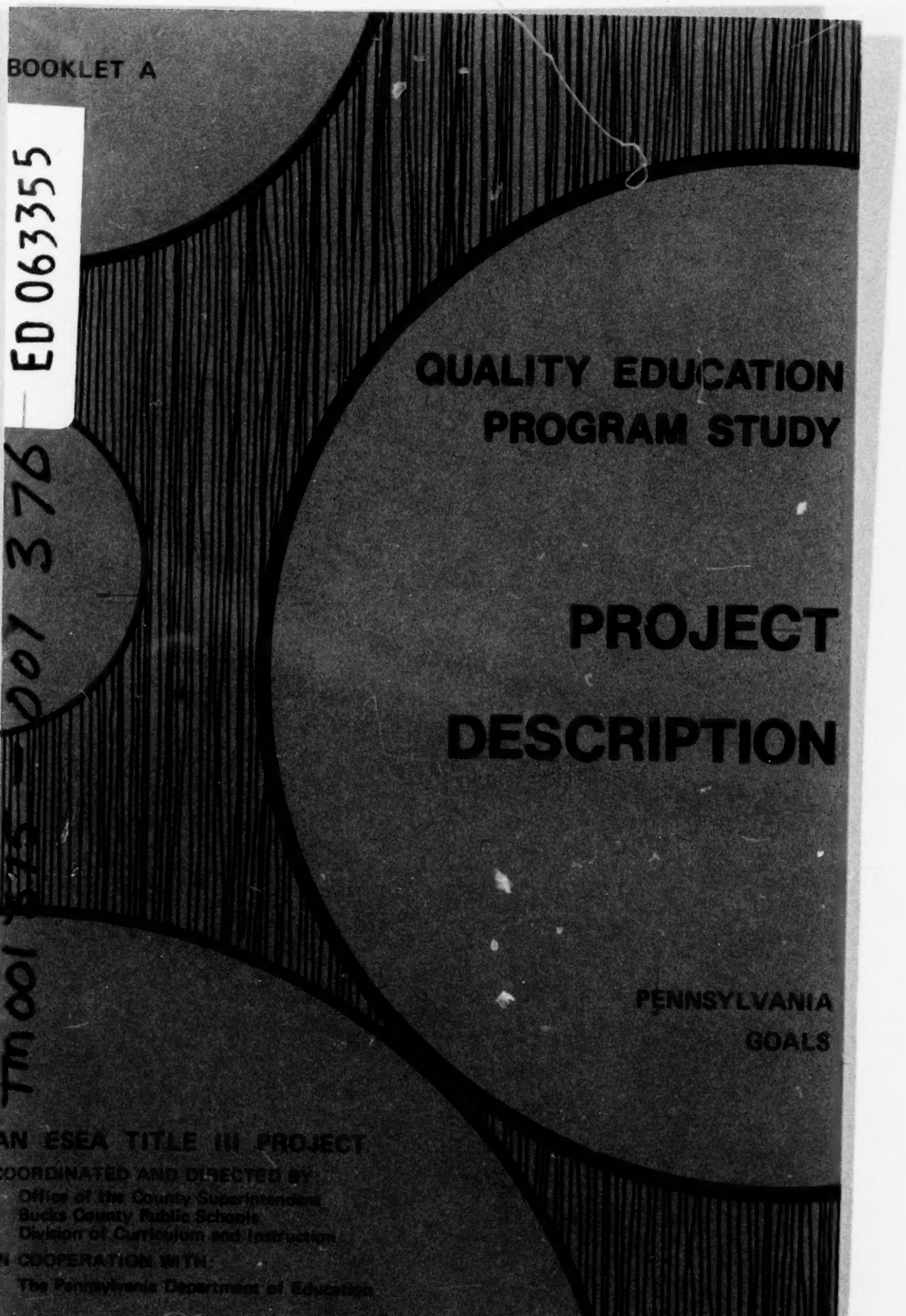
ABSTRACT

This description of the project includes background, overview, and a detailed report of procedures used to collect, handle, and analyze the data. The appendix includes a sample teacher/student critical incident form and suggestions for interviewers of teachers, students, and parents. (MS)

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BOOKLET A

# QUALITY EDUCATION PROGRAM STUDY

# PROJECT DESCRIPTION

AN ESEA TITLE III PROJECT

COORDINATED AND DIRECTED BY:
Office of the County Superintendent
Bucks County Public Schools
Division of Curriculum and Instruction

IN COOPERATION WITH:
The Pennsylvania Department of Education

JUNE 1971

## ACKNOWLEDGEMENTS

The contributions of the following persons and agencies in developing the materials contained in the twenty-three Q.E.P.S. booklets is hereby acknowledged with utmost gratitude:

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### PUBLIC, PRIVATE, AND PAROCHIAL SCHOOLS

Teachers, administrators, students, and parents in public, private, and parochial schools in the Commonwealth generally, and specifically the pilot areas of Allegheny, Beaver, Bucks, Erie, Luzerne and Westmoreland Counties and the Cities of Erie and Pittsburgh.

AMERICAN INSTITUTES FOR RESEARCH

For technical assistance with the Critical Incident Technique, data collection procedures, student and teacher behavioral specifications and related rationales.

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## PREFACE

The Bucks County Schools have for some time been committed to improving the quality of the educational offerings for its youth. Characteristic of that commitment was the manner in which officials of the Pennsylvania Department of Education, Bucks County Public Schools, Luzerne County Public Schools, Allegheny County Public Schools, Penn-Trafford School District, Pittsburgh School District, and Erie School District joined together in 1966 to draft the proposal for the Quality Education Program Study (QEPS). Conceived as a complement to Pennsylvania's pioneering efforts to assess the quality of its schools, the study was designed to define and clarify the Ten Goals of Quality Education adopted by the State Board of Education in 1965.

The following booklet is a part of the story of how Q.E.P.S. went about its ambitious task, and the results of that effort. We trust this statement of the behavioral definitions for Pennsylvania's Ten Goals of Quality Education will serve as a guide for the evaluation and improvement of teaching and learning in the schools of the Commonwealth.

Dr. George E. Raab
County Superintendent
Bucks County Public Schools

## INTRODUCTION

In recent years there has been an increased interest in goal definition in education. Most efforts toward the establishment and definition of goals seems to take the form of generalizations or descriptive statements. Little, if any, data is available concerning empirical methods for defining educational goals.

Until recently, the "Goals for Quality Education" were not defined in a coherent form. An analysis of this problem revealed that most stated goals have little exact meaning for the practicing educator. Frequently, goals are stated in such general terms that any educator could convince himself that these goals are the purpose that guide his program. Goals are statements of general educational intents. While it is not absolutely necessary for goals to be stated in performance terms, the more clearly these statements are described, the more readily we can develop valid indicators of pupil behavior.

The first step in constructing an instructional program centers upon the need for a set of objectives. An objective refers to the performance or change in behavior a pupil is to exhibit upon completion of instruction. Therefore, meaningful objectives should relate to the "Goals for Quality Education". If one is "to measure objectively the adequacy and efficiency" of educational programs, these objectives must be described in terms of not what the schools do, but in what children do. One must itemize the kinds of behavior that add up to the goals for quality education if we are ever to know how children progress toward the goals or how efficient an educational program may be in furthering such

progress. Specifying goals in this way poses practical problems.[1]

The formulation and adoption of Pennsylvania's Goals of Quality Education represents a major step toward the definition of the State's educational intents, making possible an assessment of its efforts toward the fulfillment of those intents. In an effort to further increase the utility of the goals to the practitioner and evaluator, the Quality Education Program Study was proposed to review, define, and clarify the Ten Goals. Funded in 1968 under E.S.E.A. Title III, Q.E.P.S. made a unique departure from the usual "armchair philosophy" or logical approach to goal definition by deciding to employ the Critical Incident Technique. This technique was used to collect empirical data to define the goals.

The QEPS staff collected critical incident data from teachers, students, and parents from various urban, suburban, and rural areas throughout the State. These data included both student behaviors indicative of achievement of the Ten Goals and teacher behaviors effective in helping students achieve these Goals.

The resulting descriptions or definitions for each of the Ten Goals include: (1) Student Behaviors, (2) Rationales or narrative explanations, and (3) Teacher Strategies. Also, for each Goal QEPS has developed needs assessment instruments to provide the practitioner with a mechanism to systematically gather information to assess its needs and assign priorities to those needs.

[1]Educational Testing Service. A Plan for Evaluating the Quality of Educational Programs in Pennsylvania. Volume One: The Basic Program. Princeton, New Jersey: ETS, Henry S. Dyer, Project Director, Chapter I, pages 1-4 (June 30, 1965).

It is hoped that the resulting products of three years of intensive work devoted to defining Pennsylvania's Ten Goals of Quality Education will provide various segments of the educational community with information and the means to continue to improve the quality of education for the students of Pennsylvania.

Raymond Bernabei
Assistant Superintendent
Bucks County Schools

Donald L. Wright
Project Director, Q.E.P.S

## PROJECT REPORTS

The following is a listing and brief description of the reports produced by the Quality Education Program Study:

Booklet A — Project Description
A description of the project including a background and overview and a detailed report of procedures used to collect, handle, and analyze the data. Includes an appendices.

Booklet B — General Needs Assessment
Instructions
General Needs Assessment Instrument for the Ten Goals.

Booklet C — Characteristics of Incidents and Their Reporters
Gives a tabulation of various characteristics of reporters for each category and sub-category of student behavior.

Goals One through Ten each have two reports. The first is a Description of the goals, containing three basic components: (1) the categories of student behavior, (2) rationales for the areas of effective student behavior, and (3) related teacher strategies. The second report is related to the Needs Assessment of that goal and contains: (1) Instructions, (2) the general needs assessment instrument for that goal, and (3) an analysis of instruments related to that goal. The booklets for the Ten Goals are:

| | |
|---|---|
| | Goal One - Self Understanding |
| Booklet 1 | Description |
| Booklet 1A | Needs Assessment |
| | Goal Two - Understanding Others |
| Booklet 2 | Description |
| Booklet 2A | Needs Assessment |
| | Goal Three - Basic Skills |
| Booklet 3 | Description |
| Booklet 3A | Needs Assessment |

| | |
|---|---|
| | Goal Four - Interest in School and Learning |
| Booklet 4 | Description |
| Booklet 4A | Needs Assessment |
| | Goal Five - Good Citizenship |
| Booklet 5 | Description |
| Booklet 5A | Needs Assessment |
| | Goal Six - Good Health Habits |
| Booklet 6 | Description |
| Booklet 6A | Needs Assessment |
| | Goal Seven - Creativity |
| Booklet 7 | Description |
| Booklet 7A | Needs Assessment |
| | Goal Eight - Vocational Development |
| Booklet 8 | Description |
| Booklet 8A | Needs Assessment |
| | Goal Nine - Understanding Human Accomplishments |
| Booklet 9 | Description |
| Booklet 9A | Needs Assessment |
| | Goal Ten - Preparation for a World of Change |
| Booklet 10 | Description |
| Booklet 10A | Needs Assessment |

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## HISTORICAL BACKGROUND

In 1963 the General Assembly of Pennsylvania passed Act 299 which contains provisions for development of evaluation procedures designed to measure objectively the adequacy and efficiency of the educational programs offered by the public schools of the Commonwealth of Pennsylvania.[1] To carry out the purpose of this Act, the State Board of Education appointed a committee who in turn requested Education Testing Service of Princeton, New Jersey, to develop a plan for the implementation of Section 290.1 of Act 299.

Education Testing Service recommended in their report Ten Goals of Quality Education for Pennsylvania which were adopted by the State Board of Education in 1965.

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[1]Section 290.1 of the School District Reorganization Act of 1963 is as follows:

"Education Performance Standards. --to implement the purpose of this subdivision, the State Board of Education, as soon as possible and in any event, no later than July 1, 1965, shall develop or cause to be developed an evaluation procedure designed to measure objectively the adequacy and efficiency of the educational programs offered by the public schools of the Commonwealth. The evaluation procedure to be developed shall include tests measuring the achievements and performance of students pursuing all of the various subjects and courses comprising the curricula. The evaluation procedure shall be so construed and developed as to provide each school district with relevant comparative data to enable directors and administrators to more readily appraise the educational performance and to effectuate without delay the strengthening of the district's educational program. Tests developed under the authority of this section to be administered to pupils shall be used for the purpose of providing a uniform evaluation of each school district and the other purposes set forth in this subdivision. The State Board of Education shall devise performance standards upon the completion of the evaluation procedure required by this section."

## THE TEN GOALS OF QUALITY EDUCATION FOR PENNSYLVANIA

**GOAL ONE - SELF-UNDERSTANDING**

Quality Education should help every child acquire the greatest possible understanding of himself and an appreciation of his worthiness as a member of society.

**GOAL TWO - UNDERSTANDING OTHERS**

Quality Education should help every child acquire understanding and appreciation of persons belonging to social, cultural, and ethnic groups different from his own.

**GOAL THREE - BASIC SKILLS**

Quality Education should help every child acquire to the fullest extent possible for him mastery of the basic skills in the use of words and numbers.

**GOAL FOUR - INTEREST IN SCHOOL AND LEARNING**

Quality Education should help every child acquire a positive attitude toward school and toward the learning process.

**GOAL FIVE - GOOD CITIZENSHIP**

Quality Education should help every child acquire the habits and attitudes associated with responsible citizenship.

**GOAL SIX - GOOD HEALTH HABITS**

Quality Education should help every child acquire good health habits and an understanding of the conditions necessary for the maintenance of physical and emotional well-being.

**GOAL SEVEN - CREATIVITY**

Quality Education should give every child opportunity and encouragement to be creative in one or more fields of endeavor.

**GOAL EIGHT - VOCATIONAL DEVELOPMENT**

Quality Education should help every child understand the opportunities open to him for preparing himself for a productive life and should enable him to take full advantage of these opportunities.

**GOAL NINE - UNDERSTANDING HUMAN ACCOMPLISHMENT**

Quality Education should help every child to understand and appreciate as much as he can of human achievement in the natural sciences, the social sciences, the humanities, and the arts.

**GOAL TEN - PREPARATION FOR A CHANGING WORLD**

Quality Education should help every child to prepare for a world of rapid change and unforeseeable demands in which continuing education throughout his adult life should be a normal expectation.

The Quality Education Program Study (QEPS) proposal (to review, define, and clarify the Ten Goals of Quality Education) was written in 1967, but funding was delayed until the Spring of 1968. Part of the original intent has been to provide the Pennsylvania Department of Education with more explicit definitions to be used in their work to develop "an evaluation procedure".

While it would have been desirable for QEPS to precede the State's evaluation efforts, intervening events made it impossible. During the interval of anticipated QEPS funding, the Bureau of Quality Assessment was formulated, staffed, and began the urgent task of developing instruments to assess the Ten Goals.

Both QEPS and the Bureau of Quality Assessment worked cooperatively to overcome the hardships imposed by reality to maximize the value of their related tasks to all in Pennsylvania concerned with improving the quality of the educational programs of the Commonwealth.

Areas Involved

The areas of Allegheny, Beaver, Bucks, Erie, Luzerne, and Westmoreland Counties as well as the Cities of Erie and Pittsburgh participated in the project.

Sample

Even though the sample of participants in the project was not intended to be a scientific sample, care was taken to have urban, suburban, and rural type districts well represented. Public, private, and parochial schools participated. A complete description and analysis of characteristics of the sample is reported in Booklet C, Characteristics of Incidents and Their Reporters.

## PROJECT OVERVIEW

### Data Collection of Student Behaviors

This phase of the project was devoted to the data collection of student behaviors. The Critical Incident Technique, developed by Dr. John C. Flanagan, was used in this and subsequent data collections. This technique provides a systematic way to collect observations of behavior which clearly illustrate the achievement of one of the goals of education. Special forms for each goal were designed and field tested by American Institutes for Research (AIR) and the QEPS staff.

Since direct observations of student behavior were desired, three groups most closely related to students were identified: teachers, students, and parents. Critical incidents were collected in grades five, eight, and eleven.

Teachers were asked to record behaviors which indicated effective and ineffective achievement of a given goal (1968-69).

Students were asked to recall and record their own experiences or observation of other students which clearly illustrated attainment of a goal (1968-69).

Parents were requested to recall and record student behaviors which they felt were clearly illustrative of the attainment of a particular goal (1969-70).

Teachers, students, and parents contributed about 20,000 critical incident reports of student behavior.

### Data Collection of Teacher Strategies

Again, the Critical Incident Technique was used to collect from teachers and students reports of effective teaching behaviors or strategies.

Teachers were requested to record on special forms provided those teaching techniques they used or observed another teacher use which were especially effective in helping students to achieve a particular goal (1969-70).

Students were asked to recall an incident whereby a teacher helped him or another student attain one of the goals (1970-71).

Teachers and students contributed approximately 12,000 suggested teacher strategies.

## PROCEDURES

## THE CRITICAL INCIDENT TECHNIQUE

In his book, Measuring Human Performance, University of Pittsburgh and American Institutes for Research, September, 1962, pages 2, 11, and 12, Dr. John C. Flanagan explains the Critical Incident Technique:

> "The critical incident technique consists of a set of procedures for collecting direct observation of human behavior in such a way as to facilitate their potential usefulness in solving practical problems and developing broad psychological principles. The critical incident technique outlines procedures for collecting observed incidents having special significance and meeting systematically defined criteria.
>
> "By an incident is meant any observable human activity which is sufficiently complete in itself to permit inferences and predictions to be made about the person performing the act. To be critical, an incident must occur in a situation where the purpose or intent of the act seems fairly clear to the observer and its consequences are sufficiently definite so that there is little doubt concerning its effects.
>
> "Certainly in its broad outlines and basic approach the critical incident technique has very little which is new about it. People have been making observations on other people for centuries. The work of many of the great writers of the past indicates that they were keen observers of their fellow men. Some of these writers must have relied on detailed notes made from their observations. Others may have had unusual abilities to reconstruct memory images in vivid detail. Some may have even made a series of relatively systematic observations on many instances of a particular type of behavior. Perhaps the most conspicuous need in supplementing these activities is a set of procedures for analyzing and synthesizing such observations into a number of relationships which can be tested by making additional observations under more carefully controlled conditions.

### Background and Early Developments

> "The roots of the present procedures can be traced directly back to the studies of Sir Francis Galton nearly seventy years ago, and to later developments along the lines of time sampling studies of recreational activities, controlled observation tests, and anecdotal records. The critical incident technique as such, however, can best be regarded as an outgrowth of studies in the Aviation Psychology Program of the United States Army Air Forces in World War II.

Outline of The Steps in Category Formulation

"The general process by which the data were analyzed in order to arrive at critical requirements is called Category Formulation. The name is descriptive of the process which involves grouping of behaviors into categories representing a group of similar behaviors, and formulating descriptive statements representing these groups and consisting of the critical requirements for the job in terms of behavior. The process may be divided into five successive steps.

"The first of these steps involves the identification in the incident reports of 'critical' behaviors and the separation of these behaviors from other descriptive materials in the incident. Many reports contain discussions of the background of the worker whose behavior is described. It is necessary, therefore, as a first step to separate behaviors identified as especially effective or ineffective from extraneous material, so that they alone will be treated as data.

"The second step involves the derivation of a classification system which will facilitate grouping together of similar behaviors and the ordering of data within a framework suited to the purpose of the study. This step requires, first, a choice of a frame of reference to orient the classification system; second, derivation of a set of non-overlapping categories that will encompass all the incidents; and third, definition, trial and revision of the categories.

"In the third step, each critical behavior is carefully studied and classified under one of the categories set up in the previous step.

"Further revision of the categories is necessary during the classification process. The judgment of the original analyst is checked by others in subsequent steps.

"The fourth step involves careful study of all the behaviors within a category, and grouping together of those which are so similar that for practical purposes they may be considered duplicates. Statements are then written to describe each such group in terms sufficiently general to cover the basic similarities of the component behaviors, yet sufficiently specific to make the behavior involved very clear.

"The fifth step is essentially the same as the preceding one; its object is to reduce the number of descriptive statements representing the incidents by further grouping of similar behaviors and writing new statements for them. Again, elements basic to all of them are included, but

> specific details common to some, but not all of the groups are omitted. This step, therefore, results in descriptive statements each of which incorporates a number of the statements obtained in the previous step. If necessary, this process may be repeated until the resulting statements are of a nature appropriate to the purposes of the study."

In most previous applications, the critical incident technique has been used to define or describe the behavioral specifics of an activity, for which the goals or objectives were already known or assumed. QEPS adopted a somewhat different approach, aimed at defining in behavioral terms a set of goals which had previously been stated in rather general terms. It was not entirely clear at the outset how the critical incident technique could be adapted for this somewhat different purpose. However, it was intended that the primary result should be a set of statements describing behaviors of students, that each behavior should constitute an instance of achievement of (or failure to achieve) some aspect of one of the goals of education, and that all the behaviors together should constitute a comprehensive definition of the goals of education in terms of the behavior of students. In addition, as is explained later, behaviors of teachers which encouraged or induced student achievement of a goal, were also sought.

It should be recognized that critical incident reports of student (and teacher) behavior may be biased or otherwise inadequate for any of several reasons. The reporter may have observed the behavior incompletely, may have remembered it wrong, or may have been unable to describe it clearly. Perhaps most important, the reporter may have had an idiosyncratic concept of the meaning of a given goal of education and may have reflected that concept in his choice of behavior to report. For example, if a reporter considered good citizenship to

consist primarily in unthinking obedience to laws and regulations, he might have reported as evidence of good citizenship an instance when a student obeyed a rule but in the process transgressed an ethical imperative. (This is a hypothetical example; none of our reporters submitted such an incident.)

The reader should, of course, keep in mind these and similar possible limitations of the use of the critical incident technique. However, the strengths of the technique should also be considered, especially in relation to alternative methodologies. The usual method of deriving objectives or goals is to have a small group of experts develop them on the basis of their previous experience and discussion. These individuals are subject to the same biases and limitations as are critical incident reporters, but they may be able to obscure their limitations to some degree since they state the goals in rather general, non-behavioral terms.

The reporters of critical incidents in this study were expert observers, at least in the sense that they were teachers, students, and parents actively engaged in educating or being educated. There was a very large number of reporters, so that their individual biases tend to be cancelled out. They were not allowed to take refuge in glittering generalities, but rather were asked to describe actual behavior of real students, and there is every reason to believe that they did their best to do so. Finally, it should be understood that the teacher, principal, parent, or anyone else who attempts to apply the outcomes of QEPS is not constrained to accept each and every behavioral category but may choose to ignore some and emphasize others. Some specific tools to help in doing this are described in later sections. The critical incident reports

are thus intended to serve as a basis for precise definition of the behavioral meaning of various aspects of the goals of education, but were never intended to constitute an authoritarian prescription of just what the goals should be.

## THE USE OF THE CRITICAL INCIDENT TECHNIQUE BY QEPS

The Critical Incident Technique provides a set of procedures for collecting and utilizing direct observations of specific behaviors which, in this study, clearly illustrate the achievement of one of the Ten Goals of Education. Teachers, students, and parents were asked to report observed student behaviors which clearly illustrated attainment of a goal.

A critical incident defines and clarifies the goal, not the individual student. For example, Goal Five concerns good citizenship. If a student obeys school rules, this is not a critical incident because this behavior is expected of all students. However, if the student obeyed school rules while other students were urging him to disobey these rules, then this would be a critical incident indicating he has acquired the habits and attitudes which characterize a good adult citizen.

A critical incident indicates:

1. Something the student has done or failed to do which is a clear example of attainment or lack of attainment of one of the Ten Goals.
2. An unbiased objective description of the facts in the situation.
3. Something a student did or said which was actually observed by the reporter.
4. Behavior which should be praised or which needs to be improved to attain this educational goal.

If a student behavior is a part of everyday expected classroom standards, then it is <u>not</u> a critical incident.

An example of an observed critical incident in which a student demonstrated creativity is: "Mary brought a poem to school that

she had written which showed unusual insight into children's views on values." On the other hand, the statement, "Mary did may things that showed she was creative," is not a critical incident because it does not refer to and describe a specific critical behavior.

PROCESSING OF DATA

The collected incidents were transcribed onto coded cards in each QEPS office, reviewed, and the key behavior highlighted before forwarding the incident cards to the AIR office in Pittsburgh. There the cards were used to inductively build a classification scheme of (1) student behaviors and (2) teacher strategies. A third aspect of the definition of the Ten Goals is rationale for the student behaviors, tying together the description and application of each behavioral description.

## DESCRIPTION OF DATA COLLECTION PROCEDURES

The forms provided for the teachers, students, and parents in the study were essentially the same. See the Appendix of this booklet for examples of each. In each case the goal (1-10) was stated first, followed by three questions. The first question, "What were the circumstances under which this occurred?" merely asked for the setting in which the incident was observed. The second question, "What did the student do?" asked for a description of the key behavior. The third question asked for an explanation of why this action indicates achievement or lack of achievement of the particular goal. Sometimes the incident itself may not be entirely obvious and an explanation is necessary.

Teachers were asked to report critical incidents of student behavior in two ways. First, each teacher was asked to recall and describe recent instances of appropriate student behavior (retrospective incidents). Then, over a period of two weeks, the teacher was to be alert to the occurrence of relevant incidents and write descriptions of them as soon as feasible after they happened (current incidents). It was thought that there might be systematic differences between retrospective and current incidents, but no differences of substantial magnitude were found. The two types of incidents were therefore treated the same in developing the behavioral categories.

A sub-sample of teachers was also asked to report incidents, not with respect to any one of the ten pre-specified goals of education, but relating to any important goal of education. This was done in order to determine whether behaviors reported under these instructions might be different from those reported in relation to any of the ten goals.

As it turned out, they were not substantially different; hence, analysis of these incidents was terminated as soon as that conclusion could be reached.

Special versions of the incident forms were provided for students and parents. The main difference between these forms and those used for teachers was that the language was simplified. Also, only effective incidents were requested, since it was feared that there might be cases of misunderstanding in which ineffective incidents would be considered disapproving of the particular children involved.

The second aspect of goal definition, teaching strategies, also utilized the critical incident technique to collect teacher behaviors. Teachers were asked to report strategies or techniques which they used or which they had observed another teacher use. These strategies were felt to be effective in helping a student achieve one of Pennsylvania's Ten Goals of Quality Education. Students also were asked to recall when they observed a teacher use a strategy or a technique effective in helping him or another student to achieve one of the Ten Goals. The forms used for both students and teachers were basically the same.

## HOW THE DATA WERE HANDLED AND ANALYZED

As critical incidents were collected, they were transcribed onto five-by-eight inch cards; then reviewed by the Q.E.P.S. staff and the key behavior on each card was highlighted. The analysis of critical incidents was then carried out by a research team at A.I.R. by grouping similar incidents into categories. The analyst did not begin with a predetermined set of categories, but rather attempted to induce categories which describe the behaviors reported in the incidents. These categories, though not quite so specific as the incidents, were stated in behavioral terms.

Diagram of Development of Behavioral Specifications

| | | | | |
|---|---|---|---|---|
| Teachers<br>Students<br>Parents | Critical Incidents<br>( Student )<br>(Behaviors) | Categories<br>of<br>Behavior | Areas<br>of<br>Behavior | Goal |

Perhaps an examination of this procedure using CRITICAL INCIDENTS actually reported for Goal One would serve to illustrate the process of behavioral specification.

Goal One: QUALITY EDUCATION SHOULD HELP EVERY CHILD ACQUIRE THE GREATEST POSSIBLE UNDERSTANDING OF HIMSELF AND AN APPRECIATION OF HIS WORTHINESS AS A MEMBER OF SOCIETY.

SAMPLE
CRITICAL INCIDENT #1

A Teacher Reporting a Fifth Grade Student Behavior:

1. Setting?

   DURING A CLOTHING CLASS WHEN A FASHION SHOW WAS BEING PLANNED.

2. Student Behavior?

   QUIET WELL-MANNERED GIRL OFFERED TO DEVELOP A SCRIPT FOR THE FASHION SHOW AND COORDINATE THE OUTFITS ACCORDING TO THE SCENE. SHE PREFERRED TO TAKE PART IN THIS BECAUSE SHE WAS UNUSUALLY LARGE FOR HER AGE AND QUITE HEAVY.

3. Explanation?

   SHE REALIZED SHE HAD THE ABILITY TO WORK ON THE SHOW AND THE OUTFITS AND THOUGHT HER TALENTS WOULD BE PUT TO BETTER USE RATHER THAN TO BE USED AS A MODEL WHEN SHE FELT UNSUITABLE FOR THE STAGE.

SAMPLE
CRITICAL INCIDENT #2

A Student Reporting a Fifth Grade Student Behavior:

1. Setting?

   IN SCIENCE, WHEN SHE WAS DOING GROUP WORK ON THE STUDY OF ATOMS.

2. Student Behavior?

   SHE HELPED DO REPORTS INSTEAD OF DRAWING ILLUSTRATIONS, AS SHE WAS POOR AT DRAWING.

3. Explanation?

   SHE LET OTHERS DO ILLUSTRATIONS, ALTHOUGH SHE DID LIKE TO DRAW, BECAUSE HER DRAWING WAS POOR, BUT SHE DID HELP WRITE REPORTS, WHICH SHE COULD DO WELL.

Both of these incidents are grouped and characterized by the following statement which is called a CATEGORY of behavior:

SAMPLE
CATEGORY #1

STUDENT CHOSE AN ACTIVITY OR TASK SUITED TO HIS ABILITIES IN PREFERENCE TO ONE TO HIS ABILITIES.

Examples of other similar, but distinct, categories derived from critical incidents are:

SAMPLE
CATEGORY #2

STUDENT AVOIDED AN ACTIVITY NOT SUITED TO HIS ABILITIES OR HIS GOALS.

SAMPLE
CATEGORY #3

STUDENT RECOGNIZED BOTH A POSITIVE AND A NEGATIVE PERSONAL QUALITY, ABILITY, OR INTEREST IN HIMSELF.

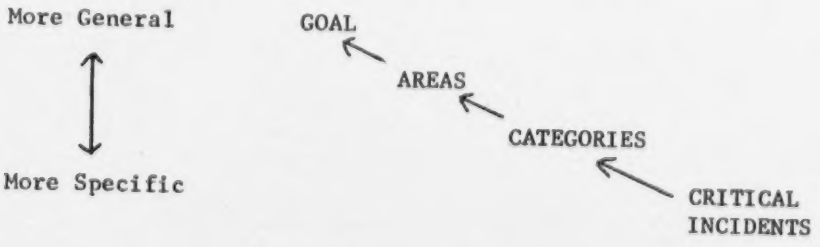
The essence of the ideas expressed in the categories are then used in deriving the AREA HEADINGS.

The above sample categories are subsumed under the AREA HEADING:

SAMPLE
AREA HEADING

STUDENT DEMONSTRATED THAT HE WAS CAPABLE OF ACCURATE SELF-APPRAISAL.

Thus, within each of the goals of education, there would normally be several areas; within each area there would be several categories of behavior, each category representing and summarizing the behaviors reported in a number of critical incidents. The end result is an organized category scheme which describes in a comprehensive way the critical incident data. This is depicted below:



Numbering of the Category Scheme

Each area, category, and sub-category is assigned a code number within the goal. For example, the first area in Goal One would be coded "1.0", the first category within the first area "1.1", and the first sub-category in the first category "1.1-1". The only hierarchy intended by the coding system is to indicate level of generality from area to category to sub-category. No hierarchy of importance or priority is intended.

## RELIABILITY STUDY OF STUDENT CATEGORIES OF BEHAVIOR

### Purpose

The category system of student behaviors for the Ten Goals of Quality Education was induced from the approximately 20,000 critical incidents collected from teachers, students, and parents. Staff members from American Institutes of Research (AIR) with the help of Q.E.P.S. spent over a year in developing the current set of categories.

To test the ability of the categorizers to express the ideas contained in the incidents and the extent to which the categories are mutually exclusive were the purposes of the reliability study. Some problems were anticipated because of several rules which were imposed on the categorizers. First, categories were to be as faithful as possible to the spirit of the incidents. No categories were to be developed without incidents to back them up. The sheer size of the category system itself presents problems.

### Design of The Study

The staff of AIR selected a stratified random sample of approximately 100 effective incidents and 50 ineffective incidents for each of the Ten Goals. Each of the selected incidents had previously been categorized by the AIR staff.

Thirty raters from the Pennsylvania Department of Education participated in the reliability study. Three raters were assigned to each goal and were asked independently to place each incident in a category. Participants were given two weeks to complete the task. Twenty-seven of the participants responded and all results are based on their

responses.

Analysis of Responses

Percentage agreement of the participants with AIR was calculated and is reported in tables one and two.

For the effective categories the average percentage agreement ranged from 37.6% in Goal Seven to a high of 69.7% in Goal Six. Eight of the ten averages were above 50% and three were at least 60% in agreement with AIR.

For the ineffective categories average percentage agreement ranged from 49.3% in Goal One to 73.3% in Goal Four. Nine of the ten averages were above 50% and five were at least 60% in agreement with AIR.

TABLE ONE EFFECTIVE CATEGORIES

Percentage Agreement of Three Raters with AIR

| Goal/Effective | Number of Incidents | A | B | C | Mean |
|---|---|---|---|---|---|
| Goal 1 | 100 | 66 | 65 | 48 | 59.7 |
| Goal 2 | 101 | 65.3 | 44.6 | 57.4 | 53.5 |
| Goal 3 | 100 | 53 | 62 | 65 | 60.0 |
| Goal 4 | 100 | 52 | 53 | 62 | 55.7 |
| Goal 5 | 100 | -- | 67 | 68 | 67.5 |
| Goal 6 | 100 | 72 | 77 | 60 | 69.7 |
| Goal 7 | 102 | 48.0 | 29.4 | 35.3 | 37.6 |
| Goal 8 | 100 | -- | 57 | -- | 57 |
| Goal 9 | 100 | 58 | 50 | 60 | 56 |
| Goal 10 | 100 | 39 | 20 | 66 | 41.7 |

TABLE TWO INEFFECTIVE CATEGORIES

Percentage Agreement of Three Raters with AIR

| Goal/Ineffective | Number of Incidents | A | B | C | Mean |
|---|---|---|---|---|---|
| Goal 1 | 56 | 50 | 52 | 40 | 49.3 |
| Goal 2 | 50 | 72 | 64 | 64 | 66.7 |
| Goal 3 | 50 | 52 | 54 | 58 | 54.7 |
| Goal 4 | 50 | 76 | 78 | 66 | 73.3 |
| Goal 5 | 51 | -- | 70.6 | 64.7 | 67.6 |
| Goal 6 | 49 | 67.3 | 73.5 | 73.5 | 71.4 |
| Goal 7 | 50 | 64 | 52 | 46 | 54 |
| Goal 8 | 50 | -- | 66 | -- | 66 |
| Goal 9 | 50 | 54 | 46 | 56 | 52 |
| Goal 10 | 50 | 40 | 56 | 80 | 58.7 |

Discussion of Results

Initial expectations at the outset of the reliability study was an agreement of 60%-70%. Only two individuals out of the 27 that completed the effective incident categorization agreed above that level. In fact, no average for a goal came up to that level (although Goal Six comes close at 69.7%). What are the reasons for this?

Three general variables have been isolated to understand the meaning of the results: (1) the raters, (2) the incidents, and (3) the category system. Each of these will be considered in turn.

The raters from the Department of Education were, of course, unfamiliar with the QEPS project and with the particular procedures of the reliability study. It was perhaps too difficult an assignment to expect these individuals to be able to interpret the incidents, the rather complex category scheme, and relate these to the instructions for the reliability study. The task was also more time-consuming than was probably anticipated by many of the raters. Hence, it should perhaps not be surprising that some errors were made by the raters, including even the assignment of non-existing category numbers to a few incidents.

The nature of the incidents themselves, too, had an influence on the overall agreement of the raters with AIR. Several specific incidents where agreement was low were examined. The reason for AIR's categorization was easily understood, but because of differences in interpretation or possible ambiguities of language, the reasons for the raters categorizing the incident differently were plausible as well.

Finally, the size of the category system and the time required to learn some of the subtleties of differentiation between categories

probably influenced the percentage agreement.

In addition to the size of the category system there is the additional problem of level of specificity of the categories. Some of the categories are quite specific while others are more general and encompass several smaller classes of behavior. Placing the appropriate limits on the category may be more difficult than was originally thought.

Although the reliability study was not considered an end unto itself the discussion here has shown that the study has been useful in describing some of the characteristics of the category system. There are some limitations to the category system, most of them probably associated with the ambiguities and subtleties of language.

## TEACHER STRATEGIES

The procedure described for developing a category scheme of student behaviors is also used to derive categories of teacher strategies. Again, an examination of selected CRITICAL INCIDENTS, a category, and an area derived in this study serve to illustrate this procedure:

Goal Two: QUALITY EDUCATION SHOULD HELP EVERY CHILD ACQUIRE UNDERSTANDING AND APPRECIATION OF PERSONS BELONGING TO SOCIAL, CULTURAL AND ETHNIC GROUPS DIFFERENT FROM HIS OWN.

SAMPLE
CRITICAL INCIDENT #1 A GRADE EIGHT TEACHER

1. Setting?

   DURING PHYSICAL EDUCATION CLASS, TWO BOYS, ONE BLACK, ONE WHITE, ARGUED OVER LOSING A BASKETBALL GAME. WORDS WERE EXCHANGED WHICH DEGRADED THE BLACK STUDENT BECAUSE OF HIS RACE.

2. Teacher Behavior?

   I SPOKE TO BOTH THE BOYS DURING THE FOLLOWING CLASS, DISCUSSED THEIR DIFFERENCES, AND TRIED TO MAKE THEM REALIZE THAT PEOPLE CAN TOLERATE AND UNDERSTAND DIFFERENCES. DURING THE FOLLOWING MONTHS I MADE IT A POINT TO HAVE THE BOYS WORK TOGETHER ON THE SAME TEAM, SQUAD, ETC.

3. Explanation?

   I SEE AN IMPROVEMENT IN THEIR ATTITUDE TOWARD EACH OTHER, AND IN TIME, IT MAY IMPROVE EVEN MORE. BOTH STUDENTS WERE CONFRONTED WITH THEIR ATTITUDES AND WERE MADE TO SEE THAT DIFFERENT RACES CAN UNDERSTAND EACH OTHER AND WORK AND PLAY TOGETHER.

SAMPLE
CRITICAL INCIDENT #2 A GRADE ELEVEN TEACHER

1. Setting?

   PARTICIPATION IN TEAM GAMES. SOME OF THE BLACK STUDENTS WOULDN'T DO THEIR BEST UNLESS MOST OF THEIR TEAM WAS BLACK.

2. Teacher Behavior?

   I TOOK SOME OF THE BETTER WHITES AND MIXED THEM WITH THE BLACKS.

3. Explanation?

   THIS SHOWED THE BLACKS THAT SOME OF THE WHITES WERE VERY TALENTED ALSO AND THAT THEY COULD WIN TOGETHER AS A TEAM.

These incidents are represented by the more generalized CATEGORY:

| SAMPLE<br>CATEGORY #1 | TEACHER ENCOURAGED OR MADE OPPORTUNITIES FOR STUDENTS TO PLAY, WORK, OR GET TOGETHER WITH THOSE WHO ARE DIFFERENT OR WITH WHOM THE STUDENTS WOULD NOT NORMALLY ASSOCIATE. |
|---|---|

Another related CATEGORY teacher behavior is:

| SAMPLE<br>CATEGORY #2 | TEACHER ASKED OR ENCOURAGED STUDENTS TO AID PERSONS WHO WERE NOT KNOWN PERSONALLY BY THE STUDENTS. |
|---|---|

Both of these categories are characterized by a more general, more inclusive AREA statement:

| SAMPLE<br>AREA HEADING | TEACHER ENCOURAGED DIRECT FACE-TO-FACE INTERACTION OR INVOLVEMENT BETWEEN STUDENTS WHO ARE DIFFERENT FROM EACH OTHER. |
|---|---|

The category scheme of teacher strategies resulting from this inductive classif cation procedure provides a more generalized set of teacher behaviors which communicates in a comprehensive way the critical incident data.

## RATIONALES FOR AREAS OF STUDENT BEHAVIOR

Utilizing the student and teacher behavior specifications, the QEPS staff wrote rationales for each Area of student behavior to complete the definition of the Ten Goals of Quality Education.

The rationale is an attempt to explicate the reasoning connecting the critical incident data to the application of the results in the schools. Each rationale has three parts: description, analysis, and application.

The description is a statement of the characteristics of the behaviors in the incidents which comprise the category. The analysis section attempts to analyze the psychological and educational implications of the behaviors and attempts to provide a bridge between the description and the application sections. The application part of the rationale attempts to describe the educational implications of the category including suggested related effective or ineffective teaching techniques.

## DATA PROCESSING

### A Description of Incidents and Their Reporters

A "Teacher Data Card" was completed by each teacher who participated in the study. On the card is reported the teacher's sex, marital status, race, age, years in the district, total years of teaching experience, education, and areas of certification. Each Teacher Data Card also contains a number designating the County, District, Grade, and Teacher.

The "Incident Card", on which each critical incident is transcribed, also has the County, District, Grade, and Teacher number of the reporter. After an incident has been placed into the proper category or sub-category of student behavior, that number from the category scheme is written on the upper right-hand corner of the Incident Card.

After all the coded information from Teacher Data Cards and Incident Cards is placed in computer memory, the Teacher Number on each Incident Card is then matched with the Teacher Number on the Teacher Data Card. From this information are prepared reports of the various characteristics of the reporters of each category and sub-category of student behavior. These reports are contained in Booklet C.

## NEEDS ASSESSMENT

From the critical incident data and resulting categories of student behavior QEPS developed a general and individual needs assessment instrument for each of the Ten Goals. The overall intent is to provide a school or district with the means to take the definitions of the Ten Goals generated by QEPS and use them directly to assess its needs and establish priorities among the Ten Goals and areas within the Goals.

The General Needs Assessment Instrument was produced by writing a capsulized heading for each area of student behavior for the Ten Goals. Then categories and sub-categories exemplifying the area were selected and rewritten at an elementary level of reading difficulty. These statements were then formatted with a five-point rating scale ranging from "most important" to "least important".

The Individual Needs Assessment Instrument utilizes the same capsulized area headings contained in the General Needs Assessment Instrument. Under each heading each category was rewritten to, again, simplify the language and readability. The intent of this instrument is to extend the usefulness of the general instrument. The focus here is on the individual student. A five-point scale is used to determine frequency of a given behavior by the student, from "always" to "never". This instrument can be used by the student as a self-evaluation, by the teacher or the parent.

The last section of the Needs Assessment booklet contains An Analysis of Instruments. Each instrument was identified logically as it related to the goals of Quality Education. This task was accomplished

by teams of consultants from the University of Alabama and the University of Nevada, Las Vegas. The procedures used in the instrument selection process are explained in each of the Needs Assessment booklets.

## PROJECT REPORTS

The following is a listing and brief description of the reports produced by the Quality Education Program Study:

| | |
|---|---|
| Booklet A | Project Description<br>A description of the project including a background and overview and a detailed report of procedures used to collect, handle, and analyze the data. Includes an appendices. |
| Booklet B | General Needs Assessment<br>Instructions<br>General Needs Assessment Instrument for the Ten Goals. |
| Booklet C | Characteristics of Incidents and Their Reporters<br>Gives a tabulation of various characteristics of reporters for each category and sub-category of student behavior. |

Goals One through Ten each have two reports. The first is a Description of the goals, containing three basic components: (1) the categories of student behavior, (2) an analysis of the areas of effective student behavior, and (3) related teacher strategies. The second report is related to the Needs Assessment of that goal and contains: (1) Instructions, (2) the general needs assessment instrument for that goal, and (3) an analysis of instruments related to that goal. The booklets for the Ten Goals are:

| | |
|---|---|
| | Goal One - Self Understanding |
| Booklet 1 | Description |
| Booklet 1A | Needs Assessment |
| | Goal Two - Understanding Others |
| Booklet 2 | Description |
| Booklet 2A | Needs Assessment |
| | Goal Three - Basic Skills |
| Booklet 3 | Description |
| Booklet 3A | Needs Assessment |

| | |
|---|---|
| | Goal Four - Interest in School and Learning |
| Booklet 4 | Description |
| Booklet 4A | Needs Assessment |
| | Goal Five - Good Citizenship |
| Booklet 5 | Description |
| Booklet 5A | Needs Assessment |
| | Goal Six - Good Health Habits |
| Booklet 6 | Description |
| Booklet 6A | Needs Assessment |
| | Goal Seven - Creativity |
| Booklet 7 | Description |
| Booklet 7A | Needs Assessment |
| | Goal Eight - Vocational Development |
| Booklet 8 | Description |
| Booklet 8A | Needs Assessment |
| | Goal Nine - Understanding Human Accomplishments |
| Booklet 9 | Description |
| Booklet 9A | Needs Assessment |
| | Goal Ten - Preparation for a World of Change |
| Booklet 10 | Description |
| Booklet 10A | Needs Assessment |

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APPENDIX

Sample Teacher/Student Critical Incident Form

Goal 1: Quality Education should help every child acquire the greatest possible understanding of himself and an appreciation of his worthiness as a member of society.

Think of a recent occasion when you observed a student do something which demonstrated good understanding of himself and appreciation of his own worth.

What was the student's grade level? _____

What were the circumstances under which this occurred?

Just what did the student do?

How did this incident show that the student understood himself and appreciated his own worth?

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Suggestions for Interviewer of Teachers to Elicit Incidents of Teacher Behavior.

1. A general description of the project and of the reasons for teacher participation should of course be presented first. In describing the project, two points should be kept in mind:

   a. Some or all of the teachers may have participated in the Teacher-on-Student or Student-on-Student Collection last year, and may remember something about the project.

   b. If you are to collect General or Open-Ended incidents (i.e., those not necessarily related to any of the ten goals), you should not mention any specific goal of education until after the General incidents have been collected.

2. If you are to collect General (Open-Ended) incidents, give each teache a blank incident form of the appropriate type. Read aloud the entries on the form, discussing each briefly. If necessary, a sample incident may be presented, but the specific goal to which the incident applies should not be mentioned. Then ask the teachers to write an incident o the form.

3. If you are to collect goal-specific incidents on our Regular Form, a brief discussion of the ten goals should be presented. Then give each teacher a blank incident form, read aloud the entries, and discuss eac briefly. Ask the teachers to write an incident on the form. When feasible, it is best to work with one goal at a time, but it will prob ably be necessary on some occasions to either (a) ask each teacher to supply incidents on more than one goal, or (b) ask groups of teachers to provide incidents on different goals.

4. Allow time for questions about the procedure. If time permits, ask the teachers to write additional incidents. When the allotted time is almost up, provide additional forms and ask that these be completed so that you can collect them on your return visit in about a week. (Specify the time of the return visit as accurately as possible.) Regular (Goal Specific) and General (Open-Ended) Forms could not be used with the same group of teachers to be completed during a given week.

Sample Teacher/Teacher Critical Incident Form.

Goal 2: Quality Education should help every child acquire understanding and appreciation of persons belonging to social, cultural and ethnic groups different from his own.

Think of a recent occasion when you or another teacher did something which was successful in helping or inducing a student to achieve good understanding and appreciation of persons belonging to social, cultural, and ethnic groups different from his own.

What grade was the student in? _____ Circle: Male Female

Circle subject in which the incident occurred:

| | | | | |
|---|---|---|---|---|
| Math | Social Studies | Art-Music | Foreign Language | Other |
| Science | Language Arts | Phys.Ed. Health | Industrial Arts | Outside Classroom |

What were the circumstances under which this incident occurred?

Just what did you or the other teacher do to help the student understand and appreciate others?

How did this incident show that the teacher's action helped the student achieve good understanding and appreciation of persons belonging to social, cultural, and ethnic groups different from his own?

If the above incident involves another teacher, please circle: Male Female

Suggestions for Interviewer of Students

(Introduce yourself if the teacher or principal has not already done so.)

Say: "YOUR SCHOOL IS HELPING ON A PROJECT TO FIND OUT WHAT THE GOALS OF EDUCATION SHOULD BE. WE ARE ASKING PARENTS, TEACHERS, AND STUDENTS TO TELL US ABOUT THINGS THEY HAVE ACTUALLY SEEN."

(For Fifth Grade Students:
(
(
(Say: "HERE IS A FORM WHICH TELLS ABOUT ONE KIND OF GOAL FOR EDUCA-
( TION. LET'S READ IT TOGETHER."
(
(Give each student a copy of the sample incident form. Read the es-
(sential material aloud, pointing out the parts that represent the
(sample incident and also pointing out that the incident might be
(about the student himself.

Then, as you give each student a blank incident form for the designated goal, say: "HERE IS A FORM WHICH TELLS ABOUT ONE (ANOTHER) GOAL. LET'S READ THE FIRST PART OF IT TOGETHER." (In the case of goal 6, say: "HERE IS A BLANK FORM," and do not read the introductory material.)

Read the introductory material (prior to "What was the student's grade?") Then say: "FILL IN THE STUDENT'S GRADE AND CIRCLE MALE OR FEMALE. MANY TIMES WRITING ONE INCIDENT WILL HELP YOU THINK OF ANOTHER, SO WHEN YOU HAVE COMPLETED ONE FORM RAISE YOUR HAND AND I WILL GIVE YOU ANOTHER. NOW YOU FILL OUT THE FORM BY TELLING ABOUT SOMETHING YOU OR ANOTHER STUDENT DID."

If any student cannot think of an incident, reassure him that there is nothing wrong in this and thank him for his efforts.

Every young person should learn to know himself so that he can choose the right kind of education and work. He should know the things he likes and can do well. He should also know what he can't do, but he should remember that his strong points are more important than his weak points.

Think of a time when you saw a student in your grade do something which showed that he understood his strong points and weak points.

What was the student's grade? _____ Circle: Male Female

When and where did this happen?

Just what did the student do to show that he understood himself?

How did this show that the student understood himself?

Suggestions for Interviewer of Parents

(Introduce yourself if the meeting chairman has not already done so.)

Say:

"THE QUALITY EDUCATION PROGRAM STUDY IS BEING CARRIED OUT BY SEVERAL SCHOOL DISTRICTS IN PENNSYLVANIA. THE STUDY IS SUPPORTED BY FEDERAL FUNDS. THE PURPOSE OF THE STUDY IS TO CLARIFY THE GOALS OF EDUCATION AND, IN THE LONG RUN, TO HELP EACH SCHOOL TO DETERMINE HOW WELL IT IS ACHIEVING THESE GOALS. "ONE WAY WE ARE STUDYING THE GOALS OF EDUCATION IS BY FINDING OUT WHAT YOUR CHILDREN DO TO SHOW THAT THEY ARE ACHIEVING CERTAIN GOALS. WE ARE ASKING TEACHERS, STUDENTS, AND PARENTS TO TELL US ABOUT SPECIFIC OCCASIONS WHEN STUDENTS HAVE SHOWN ACCOMPLISHMENT OF AN EDUCATIONAL GOAL."

Pass out a blank form for one goal to each parent, and say:
"LET US READ THROUGH THIS FORM. THE FIRST PART ASKS FOR INFORMATION ABOUT YOU. THE NEXT PARAGRAPH DESCRIBES A GOAL OF EDUCATION."

Read the form aloud, commenting briefly on the function of each part and emphasizing that reports of behavior are desired ("Just what did the child do . . .?). Then ask the parents to complete the form. Offer an additional form to each parent as you see that he has completed one.

* * * * * *

Answers to likely questions:

Q: Can the child reported on be in any grade?

A: Yes, although we would prefer 5th grade and above, since the younger children may not be able to show progress toward some of the goals.

Q: Do you want instances of failure to achieve the goal?

A: Not at this time. We have obtained some reports like that from teachers and our initial analysis shows that we are likely to get more value from positive reports.

| PARENT INFORMATION: | Circle: | Check Highest Educational Level Completed: | | | | |
|---|---|---|---|---|---|---|
| | Male<br>Female | Less than Grade 12 | High School | Post H.S. | College Degree | Postgrad-uate Work |
| | | ___ | ___ | ___ | ___ | ___ |

Every young person should learn to understand himself. He should know the things he likes and can do well, and the things that are difficult for him. It is also important that he see himself as a worthy person.

Think of a recent occasion when you observed either your child or another child do something which showed that he understood his unique talents and limitations, and his worth as an individual.

What grade was the child in? _____ Circle: Male
Female

When and where did this happen?

Just what did the child do to show that he understood himself?

How did this incident show that the child understood himself?

Student/Teacher Collection

SUGGESTIONS FOR INTERVIEWER OF STUDENTS

(After class has been turned over to you)

The following is a suggested approach in working with this collection:

Say: "WE ARE WORKING WITH TEACHERS, PARENTS AND STUDENTS ON A RESEARCH PROJECT DEALING WITH GOALS OF EDUCATION.

"WE WOULD LIKE YOUR HELP TODAY IN RECALLING SOMETHING A TEACHER DID OR SAID THAT HELPED YOU OR ANOTHER STUDENT WITH A GOAL THAT IS STATED ON THE PAPER I'M GOING TO GIVE YOU NOW. PLEASE DON'T WRITE ANYTHING UNTIL WE'VE READ THE PAPER TOGETHER AND ANSWER ANY QUESTIONS YOU MAY HAVE."

1. Read complete form to the class, direct the filling in of the upper portion of the form, answer questions.

   Special Note! On the form where it says: "Circle for Student: Male Femal ask the student to circle his/her own sex.

2. Provide examples only as a last resort to elicit responses. Examples from other students are often more beneficial than from the interviewer.

An important goal of education is for each student to learn to understand himself. Every young person should know the things he likes and the things he can do well. He should also know what he can't do well, but he should remember that his strong points are more important than his weak points.

A teacher can sometimes help a student to understand himself. Think of a recent time when you saw a teacher do something that helped you or another student this way.

What grade was the student in at the time? _____ Circle for student: Male
Female

Circle for teacher: Male
Female

When and where did this happen?

Just what did the teacher do to help the student understand himself?

How did this help the student to understand himself?